

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

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1. A method of surveying including the step of surveying with a survey instrument onto a hydrant monument the location of which is known in at least 2 dimensional space.

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2. A method as claimed in claim 1 wherein the surveying is onto a reference point on said hydrant monument.

3. A method as claimed in claim 3 wherein said reference point is on an actuating or operating nut.

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4. A method as claimed in claim 3 wherein said reference point is on a top surface of said actuating or operating nut.

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5. A method as claimed in claim 2 wherein said reference point has a known location in at least 2 dimensional space.

6. A method as claimed in claim 5 wherein said reference point has a known location in 3 dimensional space.

7. A method of surveying including the step of surveying from a hydrant monument the location of which is known in at least 2 dimensional space, onto a survey target.
- 5 8. A method as claimed in claim 7 wherein the surveying is from a reference point on said hydrant monument.
9. A method as claimed in claim 8 wherein said reference point is on an actuating or operating nut.
- 10 10. A method as claimed in claim 9 wherein said reference point is on a top surface of said actuating or operating nut.
11. A method as claimed in claim 8 wherein said reference point has a known
- 15 location in at least 2 dimensional space.
12. A method as claimed in claim 11 wherein said reference point has a known location in 3 dimensional space.
- 20 13. A method of creating a geographical information system ^{for use in surveying,} comprising the steps of ascertaining the locations in at least 2 dimensional space of a plurality of hydrants and incorporating said locations of said plurality of hydrants into said geographical information system.

14. A method as claimed in claim 13 further comprising the step of making said locations of said plurality of hydrants in said geographical information system available for use in conducting a survey.
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15. A method as claimed in claim 13 wherein said locations are ascertained and incorporated in 3 dimensional space.
16. A method as claimed in claim 13 wherein said locations of said plurality of hydrants are used as control points for said geographical information system.
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17. A method as claimed in claim 13 wherein the location of a reference point on the hydrants is ascertained and incorporated into said geographical information system.
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18. A method as claimed in claim 13 wherein geographical information system is for use in association with a municipal water supply system.
19. A geographical information system having a plurality of control points, at least one of said control points comprising a hydrant.
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20. A geographical information system a claimed in claim 19 wherein a plurality of control points each comprises a hydrant.

21. A geographical information system as claimed in claim 20 wherein each of said plurality of control points comprises a reference location on each said hydrant.
- 5 22. A geographical information system as claimed in claim 19 wherein each hydrant has a vertically upstanding barrel section adapted for fluid communication with a water source and at least one water outlet adapted for fluid communication with said barrel section.
- 10 23. A geographical information system as claimed in claim 19 wherein said hydrant has survey indicia positioned thereon.
24. A network of survey monuments comprising a plurality of survey monuments, two or more of said plurality of survey monuments comprises hydrant monuments
15 each hydrant monument comprising: a barrel section adapted for fluid communication with a water source and at least one water outlet adapted for fluid communication with said barrel section.
25. A method of using a hydrant to reference the location of a mobile location device,
20 said method including the steps of:
- (a) placing said mobile location device proximate a hydrant monument; said hydrant monument having a vertically upstanding barrel section adapted for

fluid communication with a water source; at least one water outlet adapted for fluid communication with said barrel section; and

(b) entering known co-ordinates associated with the location of the hydrant monument into the mobile location device;

5 (c) after steps (a) and (b), running a reference routine built into said mobile location device.

26. A method as claimed in claim 25 wherein said reference routine is one of a localization routine, a calibration routine and initialization routine.

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27. Method of gathering geographical information for a geographical information system with the use of a positioning device, using a hydrant as a reference location for said system, said method including the steps of:

(a) placing said positioning device proximate a hydrant monument;

15 (b) entering the known position of hydrant monument into the positioning device.

28. A method of using a geographical information system in conducting a survey, said geographical information system comprising a plurality of hydrant monuments having accorded thereto in said geographical information system known locations in at least 2 dimensional space, said method comprising the steps of (a) identifying a hydrant monument (b) accessing said geographical

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information system to ascertain the location information of said hydrant and (c) conducting a survey operation from said hydrant.

29. A method as claimed in claim 28 wherein said locations are known in 3
5 dimensional space.
30. A method as claimed in claim 28 wherein a reference location on each of said
plurality of hydrant monuments has accorded thereto in said geographical
information system a known location, and wherein said survey operation is
10 conducted in relation to said reference point.
31. A method of surveying comprising using a hydrant monument having a known
location in at least 2 dimensional space as a survey monument in conducting a
survey.
- 15 32. A method as claimed in claim 31 wherein said location is known in 3 dimensional
space.
33. A method as claimed in claim 31 comprising using a reference location on a
20 hydrant as a survey location as a survey monument.
34. A method of surveying comprising mounting a survey instrument on a hydrant
said hydrant having a known location in at least 2 dimensional space.

35. A method as claimed in claim 34 wherein said survey instrument is mounted in association with a reference point having a known location in at least 2 dimensional space located on said hydrant.

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36. A computer program adapted for generating a visual representation of a section of terrain in the real world, said representation including indicators for a series of computer generated fire hydrants corresponding to fire hydrants in said section of terrain, said fire hydrants in said section of terrain having known co-ordinates for inputting into said computer program as location control points for said computer generated representation, whereby when said known co-ordinates corresponding to said series of fire hydrants in said section of terrain are inputted to said computer program as location control points, said computer program will generate a representation having all features shown in the representation in their true relative positions.

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37. A computer program for generating a map or model having a plurality of location control points corresponding to fire hydrants in the real world, each of said fire hydrants having co-ordinates in the real world stored in said computer program.

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38. A method of creating a map comprising using a plurality of hydrants the location of which is known in the real world as a plurality of control points, and rubber-

sheeting a data set with reference to said control points to properly position a plurality of features on said map in a proper position relative to each other.

39. A method of surveying including the step of sighting with a survey instrument
5 onto a hydrant monument the location of which is known in at least 2 dimensional space.
40. A method as claimed in claim 39 wherein the sighting is onto a reference point on
10 said hydrant monument.
41. A method as claimed in claim 40 wherein said reference point is on an actuating
or operating nut.
42. A method as claimed in claim 41 wherein said reference point is on a top surface
15 of said actuating or operating nut.
43. A method as claimed in claim 40 wherein said reference point has a known
location in at least 2 dimensional space.
- 20 44. A method as claimed in claim 43 wherein said reference point has a known
location in 3 dimensional space.

45. A method of surveying including the step of sighting from a hydrant monument the location of which is known in at least 2 dimensional space, onto a survey target.
- 5 46. A method as claimed in claim 45 wherein the sighting is from a reference point on said hydrant monument.
47. A method as claimed in claim 46 wherein said reference point is on an actuating or operating nut.
- 10 48. A method as claimed in claim 47 wherein said reference point is on a top surface of said actuating or operating nut.
49. A method as claimed in claim 46 wherein said reference point has a known
15 location in at least 2 dimensional space.
50. A method as claimed in claim 46 wherein said reference point has a known location in 3 dimensional space.